

- LE'VZ 200-300 OOP -

SEPT 1986. #13 A\$1.00. J.C.E.D'Alton. 39 Ames St., TOOWONG. QLD. 4066.

AUSTRALIA.

Hi OOPs,

Some may like to that I had a fantastic skiing holiday on Mt.Hotham from the 21st.to the 26th. of July. Yes,I am all in one Piece and ready to carry on as before. It was during that week in which unusual weather conditions prevailed in that snow fell apparently for the first time on record in many areas. Hobart airport was closed and snow fell at Tullamarine. Ah ... what beauty on the mountain.

I did not talk to any OOP's on the mountain, but made a few 2 metre "ham" contacts from the summit with all my ski gear on, and from my Arlberg apartment via the Wodonga repeater, 147000MHZ. I certainly recommend Mt. Hotham to beginner and expert skiers alike, although the runs are quite short and so a lot of lift riding has to be done.

My visit to Melbourne after skiing was quite successful as well as meeting four OOPs at the Richmond D.S.E. store. A report on this elsewhere.

There has been a minimum of communications from OOPs and others in regard to the "stirring" I did in the last LE'VZ about the potential uses of the VZ. Would OOPs who are able to supply or build various hardware please contact me so that I can print in #14 LE'VZ your name and address and prices. Scott Le Brun is offering Compumouse units.

It has been suggested that I start a Software Library, but as many OOPs know, I did start one but was unsuccessful due to lack of interest. Perhaps more communication with Mr.Bob Kitch by those interested would be beneficial. Anyway, honestly I now do not have the time to conduct one.

As I am receiving so much mail now with much of it requiring an answer/s, I request that a S.A.S.E. be sent, as it is costing me quite a bit in postage. More so when the postal charges increase again.

Sod Bless to all — John.

VS SOFTWAREZ-VHINTZ-VHARDWAREZ BOOK.

I am printing a small book in A4 size as D.S.E. have no books other than the new Technical Manual for sale at present. It is mainly for beginners to computing with short Basic Programme listings to start with, leading up to longer programmes of about three pages long.

It also contains hints and kinks to make computing a little easier. Then there are small and larger hardware modifications and units for folk who are handy with a soldering iron. For the more advanced "hacker" there are small and larger Machine Language routines for the Z80.

Although it is advertised in the August 1986 issue of Australian Computer, it may not be ready for sale just yet.



This is the continuation of MEAN STREETS by Mr. Davis, from
LE'VZ # 12.

785 Z=0:A1=0:FORN=11T015:IFE(
N,1)=2,Z=E(N,0)

```
485 IFXX=1,PRINT$(T(2));" DEDUCES;"PR
INT:GOTO495
490 PRINT$(T(2));" ALLEGES TO "
491 PRINT$(T(A1));"PR:PRINT:PFINT
495 PRINT" MURDERER : ";$(SS(A2)):PRINT
500 PRINT" WEAPON : ";$(WW(A3)):PRINT
505 PRINT" LOCATION : ";$(LL(A4))
510 GOSUB875:PRINT8480,"
```

```
511 FORI=1T08:PRINTCHR$(27):NEXTI:RETU
RN
515 IFXX=0,530
520 IFSS(A2)=S(5)ANDWW(A3)=W(5)ANDLL(A4)
=L(5),PRINT$:END
525 PRINTWR$:XX=0:GOTO580
530 PRINT$(T(A1));R$::IFA1=1,N1=1
535 IFA1=3,N1=2
540 IFA1=4,N1=10
545 GOSUB895
550 FORN=1T0N1+2:IFH(N)=SS(A2),PRINT$(
SS(A2)):GOTO580
555 IFH(N)=WW(A3)+10,PRINT$(WW(A3)):GOT
O580
560 IFH(N)=LL(A4)+20,PRINT$(LL(A4)):GOT
O580
565 NEXT:PRINT$:IFA1=1THEN580
570 RU=1000:IFRU>LU,580
575 E(A2,A1)=2:E(A3+5,A1)=2:E(A4+10,A1)=
2
```

```
580 GOSUB875:Z=3
585 A1=RND(4):IFA1=3,585
590 GOSUB895:GOSUB800:GOTO555
595 A2=RND(5):A3=RND(5):A4=RND(5):GOSUB4
80:RETURN
600 F2=0:F3=0:F4=0
605 PRINTC$:PRINT$(T(A1));R$::IFA1=1,N
1=1
610 IFA1=2,N1=4
615 IFA1=3,N1=7
620 IFA1=4,N1=10
625 GOSUB895
```

```
630 FORN=1T0N1+2:IFH(N)=SS(A2),PRINT$:
F2=A2:GOTO660
635 IFH(N)=WW(A3)+10,PRINT$:F3=A3:GOTO6
60
640 IFH(N)=LL(A4)+20,PRINT$:F4=A4:GOTO6
60
```

```
645 NEXT:PRINT$:IFA1=1,660
650 RU=1000:IFRU>LU,660
655 E(A2,A1)=2:E(A3+5,A1)=2:E(A4+10,A1)=
2
```

```
660 GOSUB875:RETURN
665 Z=4:A1=RND(4):IFA1=4,665
670 GOSUB895:GOSUB800:Z=0:A1=0:FORN=1T05
:IFE(N,1)=2,Z=E(N,0)
```

```
675 FORN=1T04:IFE(N,N1)=0,A1=N1:A2=E(N,
0):N1=4:N=5
```

```
680 NEXT:NEXT:IFA1=0,750
685 Z=0:FORN=6T010:IFE(N,1)=2,Z=E(N,0)
```

```
690 NEXT:IFE(N,0),A3=2:GOTO720
695 A3=RND(5)
```

```
700 Z=0:FORN=1T015:IFE(N,1)=2,Z=E(N,0)
```

```
705 NEXT:IFE(N,0),A4=2:GOTO715
710 A4=RND(5)
```

```
715 Z=1:GOSUB480:Z=1:GOSUB580:RU=1000:IF
RU>LU,330
```

```
720 IFF2=0,730
725 FORN=1T04:E(F2,N)=1:NEXT:GOTO330
```

```
730 IFF3=0,740
735 FORN=1T04:E(F3+5,N)=1:NEXT:GOTO330
```

```
740 IFF4=0,390
745 FORN=1T04:E(F4+10,N)=1:NEXT:GOTO390
```

```
750 IFZ<0,A2=2:GOTO760
755 A2=INT(5*RND(1)+1)
```

```
760 Z=0:A1=0:FORN=6T012:IFE(N,1)=2,Z=E(N,
0)
```

```
765 FORN=1T04:IFE(N,N1)=0,A1=N1:A3=E(N,
0):N1=4:N=10
```

```
770 NEXT:NEXT:IFA1<0,770
775 IFF2<0,A3=2:GOTO785
```

```
780 A3=RND(5)
```

780 A3=RND(5)

You will need a
magnifying glass for
the rest of MEAN
STREETS, sorry.



Oh how beautiful it
was at Mt. Hotham.
Guess who in the ski
gear??

Dave Boyce's VZ system.

Dave is an avid "hacker" which enables
him to expand on the basic VZ. Hopefully,
this is the first report of what extra
hardware OOP's and others are connecting to
the VZ.

Big keyboard with extra function keys.
28K RAM.

Disc Drive.

2K RAM, 6000H to 67FFH.

VZ Printer Plotter.

Brother M-1009 Dot Matrix printer.

Set of joysticks.

Speech Synthesiser, Compumuse EA.

Two printer buffers. 16K and 64K.

Adapter board to run joysticks and printer at
the same time.

VZ Data Recorder.

LE'VZ # 13 P2.

BIO PLOT.

This contribution from Mr. Davis of MILDURA, VIC uses the Extended Basic command, ON GOTO. It is on line 911. See his note at the end of the listing.

BIO PLOT

```

100 CLS:PRINT@10,"BIO RHYTHM CLOCK":PRINT
110 PRINT"I WILL NEED SOME DATES FROM YOU,
ENTER THEM BY NUMBERS"
120 PRINT"ALWAYS ENTER THE COMPLETE FOUR
DIGIT YEAR"
150 PRINT"EACH INPUT ELEMENT SHOULD BE SE
PERATED FROM THE NEXT"
160 PRINT"BY A COMMA(,)":PRINT
165 INPUT"ENTER DAY OF THE WEEK (SUN=1,
MON=2, SAT=7)";I
170 INPUT"ENTER TODAY'S DATE(DD,MM,YYYY)
";A,B,C
190 PRINT:INPUT"ENTER YESTERDAY'S DATE(DD
,MM,YYYY) ";D,E,F
200 PRINT:INPUT"ENTER YOUR BIRTHDATE(DD,
MM,YYYY) ";G,H,J
205 INPUT"ENTER YOUR NAME, PLEASE";A$
210 IF (B=E)*(A<>D+1)+(J<>C)+(J<>F)+(A>31)+
(D>31)+(G>31)THEN 250
220 IF (I>7)+(B>12)+(E>12)+(H>12)+(B<>E)
*(A<>1) THEN 250
230 GOTO 260
250 PRINT TAB(5),"INPUT ERROR TRY AGAIN
?":GOTO165
260 IF F-J<2 THEN PRINT"BIRTHDATE TOO CL
OSE FOR ACCURACY"GOTO170
300 REM DAYS IN FULL YEARS BETWEEN BIRTH
AND YESTERDAY
310 Q=(F-1)-(J+1):GOSUB 2000:Y=(Q*365)+X
:IF Y<0 THEN Y=0
350 R=U:S=E-1:I=1:IF S=0 THEN Q=0:GOTO 3
70
360 GOSUB 900:IF (F/4=INT(F/4))*(E>2)THE
N Q=Q+1
370 W=Q+D:REM W=# DAYS FROM BEGINNING OF
THIS YEAR TO YESTERDAY
400 K=H:S=12:I=H+1:IF I=13 THEN 430

```

```

410 GOSUB 900:U=Q:IF (J/4=INT(J/4))*(H<3)
THEN U=U+1
430 R=H-1:S=1:I=1:GOSUB 900
435 U=U+(Q-G)
440 U=U+W+Y
450 Q=(I/23)*K=INT((Q-INT(Q))*23)+.5)
460 Q=(I/23)*K=INT((Q-INT(Q))*23)+.5)
470 Q=(I/23)*K=INT((Q-INT(Q))*23)+.5)
482 RESTORE:FOR N=0TO6:READ D$(N):NEXT I
483 H=H-2
484 IF H=0 THEN 486
485 H=H+12:J=J-1
486 Z=INT(J/100):J=J-2*100
487 I=INT((13*(H-1)/5)+INT(J/4)+INT(Z/4)+
G+J-2)*2
488 R=T-2*INT(I/7):B$=D$(R)
495 CLS:PRINT A$;,"YOU'VE BEEN AROUND FO
R "
497 PRINT U+1"DAYS"
498 PRINT"YOU WERE BORN ON A ";B$
499 GOSUB 800
500 MODE(1):COLOR4
510 FORX=10TO155:STEP21:FORY=5TO27:SET(X,
Y):NEXT Y
520 Y=16:FORX=10TO15:SET(X,Y):NEXT
550 O=11.5:P=K:R=1/3:T=23:COLOR2:GOSUB30
00
600 O=14:P=L-1:R=1/3:T=28:COLOR3:GOSUB30
00
650 O=16.5:P=M-3:R=1/3:T=33:COLOR4:GOSUB
3000
700 X$=INKEY$:K$=INKEY$:IF K$<>" " THEN 7
00 ELSE 200
800 PRINT:PRINT"PHYSICAL (YELLOW) CURVE
LASTS FOR 23 DAYS."
810 PRINT"TODAY IT'S AT DAY #";K+1
820 PRINT:PRINT"EMOTION (BLUE) CURVE LAS
TS FOR 28 DAYS."
830 PRINT"TODAYS IT'S AT DAY #";I+1
840 PRINT:PRINT"MINI (RED) CURVE LASTS
3 DAYS."

```

```

850 PRINT "TODAY IT'S AT DAY #";M+1
855 PRINT " PRESS >>>SPACE<<< TO CONTINUE
"
860 K$=INKEY$:Q$=INKEY$
870 IF Q$<>" " THEN 860 ELSE RETURN
900 REM CALCULATE DAYS IN COMPLETE YEAR
SUB
910 Q=0:FOR N=T TO S:R=R+1
911 ON P GOTO 931,928,931,930,931,930,93
1,931,930,931,930,931
925 NEXT:RETURN
928 Q=Q+28:GOTO 925
930 Q=Q+30:GOTO 925
931 Q=Q+31:GOTO 925
950 DATA SUNDAY,MONDAY,TUESDAY,WEDNESDAY
,THURSDAY
960 DATA FRIDAY,SATURDAY
2000 REM ADJUST FOR LEAPYEAR SUB
2010 Z=INT((Q+3)/4):IF J+1>1900 THEN RETUR
N
2020 R=INT((J+19/100):FOR N=19 TO 0 STEP -1:I
FR=N THEN 2050
2030 NEXT
2050 IF R*100=J+1 THEN R=R-1
2060 IF J+1>1600 THEN Z=Z-(19-R):RETURN
2070 IF J+1>1200 THEN Z=Z+1-(19-R):RETUR
N
2080 IF J+1>800 THEN Z=Z+2-(19-R):RETURN
2090 IF J+1>400 THEN Z=Z+3-(19-R):RETURN
2095 Z=Z+4-(19-R):RETURN
3000 REM CALCULATE AND DRAW SUB
3100 FOR N=11 TO 114:P=P+R:IF P>T THEN P=1
3200 X=(P*180)/O:X=INT(X+.5)
3201 IF Y>=180 THEN X=X-180:X=-X
3400 X=X/57.29578
3440 Y=Y-X**X/6+X**X**X**X/120-X**X**X**X
**X/5040
3450 Y=Y+X**X**X**X**X**X**X/362880
3460 X=N:Y=INT((Y*(-10))+.5)+16:SET(X,Y)
:NEXT:RETURN

```

***** NOTE *****
 LINE 911 CONTAINS AN ON GOTO STATEMENT
 AND WILL HAVE TO BE ENTERED FIRST
 USING THE FOLLOWING INSTRUCTIONS
 911 ? R GOTO 931,928,ETC
 POKE 31469,161
 911
 ONCE THIS IS DONE LINE 911 WILL NOT LIST
 AND YOU CANNOT EDIT IT
 OR BETTER STILL GET A COPY OF JOHN'S
 VZ 200 EXTENDED BASIC THAT GIVES YOU
 THIS AND OTHER HIDDEN COMMANDS.

```

221 ;EDKAS PATCH TO ENABLE
222 ;PRINTOUT-G, CALHOUN 6/86
223 LD A,200H
224 LD (8F52H),A
225 LD A,28AH
226 LD (8F58H),A
227 LD A,03AH
228 LD (8F59H),A
229 ;LOADS IN CALL TO
230 ;PRINTER ROUTINE.
231 LD A,22H
232 LD (8F66H),A
233 LD A,22H
234 ;LOADS IN NOP TO DISABLE
235 ;EXTRA LINE FEED.
236 JP 7B23H
237 ;RETURN TO EDKAS.

```

D.S.E. EDITOR/ROSENBLER PATCH.

This "M/L patch" was sent in by Grant Calhoun of Eureka Creek, NSW. He found that neither of the two in LEVZ #12 would work, so he permanently "patched" the D.S.E. Ed/Res. by using Willie Obrist's Monitor/Debugger. TUD. Grant did not see what printer he is using.



TO CHECK IF A DEVICE IS LOCATED IN THE
 "CARTRIDGE" RAM AREA.

```

1st. location 4000 HEX should be F0 HEX
4001 HEX should be 55 HEX
4002 HEX should be 57 HEX
4003 HEX should be 10 HEX

```

David Howard.

LEVZ #13

P 4.

BIO PLOT.

This contribution from Mr. Davis of MILDURN, VIC uses the Extended Basic command, ON GOTO. It is on line 911. See his note at the end of the listing.

```

100 CLS:PRINT@10,"BIO RHYTHM CLOCK":PRINT
110 PRINT"I WILL NEED SOME DATES FROM YOU,
ENTER THEM BY NUMBERS"
120 PRINT"ALWAYS ENTER THE COMPLETE FOUR
DIGIT YEAR"
150 PRINT"EACH INPUT ELEMENT SHOULD BE SE
PERATED FROM THE NEXT"
160 PRINT"BY A COMMA(,)":PRINT
165 INPUT"ENTER DAY OF THE WEEK (SUN=1,
MON=2, SAT=7)":I
170 INPUT"ENTER TODAY'S DATE(DD,MM,YYYY)
";A,B,C
190 PRINT:INPUT"ENTER YESTERDAY'S DATE(DD
,MM,YYYY) ";D,E,F
200 PRINT:INPUT"ENTER YOUR BIRTHDATE(DD,
MM,YYYY) ";G,H,I
205 INPUT"ENTER YOUR NAME, PLEASE":A$
210 IF (B=E)*(A<>D+1)+(J>C)+(J>F)+(A>31)
+(D>31)+(G>31)THEN 250
220 IF (I>12)+(H>12)+(E>12)+(D>12)+(B<>E)
*(A<>1) THEN 250
230 GOTO 260
250 PRINT TAB(5),"INPUT ERROR TRY AGAIN
";GOTO165
260 IF F-J<2 THEN PRINT"BIRTHDATE TOO CL
OSE FOR ACCURACY"GOTO170
300 REM DAYS IN FULL YEARS BETWEEN BIRTH
AND YESTERDAY
310 Q=(F-1)-(J+1):GOSUB 2000:Y=(Q*365)+2
:IF Y<0 THEN Y=0
350 R=Q:S=E-1:T=1:IF S=0 THEN Q=Q:GOTO 3
70
360 GOSUB 900:IF (F/4=INT(F/4))*(E>2)THE
N Q=Q+1
370 W=Q+D:REM W=# DAYS FROM BEGINNING OF
THIS YEAR TO YESTERDAY
400 R=H:S=12:T=H+1:IF T=13 THEN 430
410 GOSUB 900:U=Q:IF (J/4=INT(J/4))*(H<3)
THEN U=U+1
430 R=H-1:S=1:T=1:GOSUB 900
435 U=U+(Q-G)
440 U=U+W+Y
450 Q=U/23:K=INT((Q-INT(Q))*23)+.5)
460 Q=U/28:L=INT((Q-INT(Q))*28)+.5)
470 Q=U/33:M=INT((Q-INT(Q))*33)+.5)
482 RESTORE:FOR N=0 TO 6:READ D$(N):NEXT
483 H=H-2
484 IF H>0 THEN 486
485 H=H+12:J=J-1
486 Z=INT(J/100):J=J-2*100
487 T=INT((13*H-1)/5)+INT(J/4)+INT(Z/4)+
G+J-2*2
488 R=T-7*INT(T/7):B=D$(R)
495 CLS:PRINT A$;"YOU'VE BEEN AROUND FO
R "
497 PRINT U+1"DAYS"
498 PRINT"YOU WERE BORN ON A ";B$
499 GOSUB 800
500 MODE(1):COLOR4
510 FORX=10 TO115STEP21:FORY=51027:SET(X,
Y):NEXT NEXT
520 Y=16:FORX=10 TO115:SET(X,Y):NEXT
550 O=11.5:P=K:R=1/3:T=23:COLOR2:GOSUB30
00
600 O=14:P=L-1:R=1/3:T=28:COLOR3:GOSUB30
00
650 O=16.5:P=M-3:R=1/3:T=33:COLOR4:GOSUB
3000
700 X$=INKEY$:K$=INKEY$:IF K$<>" " THEN 7
00 ELSE 200
800 PRINT:PRINT"PHYSICAL (YELLOW) CURVE
LASTS FOR 23 DAYS."
810 PRINT"Today 11'S AT DAY #":K+1
820 PRINT:PRINT"EMOTION (BLUE) CURVE LAS
TS FOR 28 DAYS."
830 PRINT"Today 11'S AT DAY #":J+1
840 PRINT:PRINT"Mind (RED) CURVE LASTS
3 DAYS."

```

```

850 PRINT "TODAY IS AT DAY #";M+1
855 PRINT " PRESS >>>SPACE<<< TO CONTINUE
"
860 K$=INKEY$:Q$=INKEY$
870 IF Q$<>" " THEN 860 ELSE RETURN
900 REM CALCULATE DAYS IN COMPLETE YEAR
3LB
910 Q=0:FOR N=T TO S:R=R+1
911 ON R GOTO 931,928,931,930,931,930,93
1,931,930,931,930,931
925 NEXT:RETURN
928 Q=Q+28:GOTO 925
930 Q=Q+30:GOTO 925
931 Q=Q+31:GOTO 925
950 DATA SUNDAY,MONDAY,TUESDAY,WEDNESDAY
,THURSDAY
960 DATA FRIDAY,SATURDAY
2000 REM ADJUST FOR LEAPYEAR SUB
2010 Z=INT((Q+3)/4):IF J+1>1900 THEN RETUR
N
2020 R=INT((J+19/100)):FOR N=19 TO 0 STEP -1:I
FR=N THEN 2050
2030 NEXT
2050 IF R*100=J+1 THEN R=R-1
2060 IF J+1>1600 THEN Z=Z-(19-R):RETURN
2070 IF J+1>1200 THEN Z=Z+1-(19-R):RETUR
N
2080 IF J+1>800 THEN Z=Z+2-(19-R):RETURN
2090 IF J+1>400 THEN Z=Z+3-(19-R):RETURN
2095 Z=Z+4-(19-R):RETURN
3000 REM CALCULATE AND DRAW SUB
3100 FOR N=11 TO 114:P=P+R:IF P>T THEN P=1
3200 X=(P*180)/O:X=INT(X+.5)
3201 IF X>=180 THEN X=X-180:X=-X
3400 X=X/57.29578
3440 Y=X-X**X**X/6+X**X**X**X/120-X**X**X**X*
Y**X/5040
3450 Y=Y+X**X**X**X**X**X**X/362880
3460 X=N:Y=INT((Y*(-10))+.5)+16:SET(X,Y)
:NEXT:RETURN

```

***** NOTE *****
 LINE 911 CONTAINS AN ON GOTO STATEMENT
 AND WILL HAVE TO BE ENTERED FIRST
 USING THE FOLLOWING INSTRUCTIONS
 911 ? R GOTO 931,928,ETC
 POKE 31469,161
 911
 ONCE THIS IS DONE LINE WILL NOT LIST
 AND YOU CANNOT EDIT IT
 OR BETTER STILL GET A COPY OF JOHN'S
 VZ 200 EXTENDED BASIC THAT GIVES YOU
 THIS AND OTHER HIDDEN COMMANDS.

```

201 ;ED/VAS PATCH TO ENABLE
202 ;PRINTOUT-G.CALHOUN 6/86
203 LD A,200H
204 LD (8F52H),A
205 LD A,2B4H
206 LD (8F58H),A
207 LD A,034H
208 LD (8F59H),A
209 ;LOADS IN CALL TO
012 ;PRINTER ROUTINE.
211 LD A,22H
212 LD (8F68H),A
213 LD A,22H
214 ;LOADS IN NOP TO DISABLE
215 ;EXTRA LINE FEED.
216 JP 7802H
217 ;RETURN TO ED/VAS.

```

D.S.E. EDITOR/ROSENBLER PATCH.

This "M/L patch" was sent in by Grant Calhoun of Elmer Creek, NM. He found that neither of the two in LE/VZ #12 would work, so he permanently "patched" the D.S.E. Ed/Vas. by using Willie Ibric's Monitor-Telocator. TUD. Grant did not see what printer he is using.



TO CHECK IF A DEVICE IS LOCATED IN THE
 "CRAFTBRIDGE" RPM AREA.

```

1st. location 4000 HEX should be 00 HEX
      4001 HEX should be 55 HEX
      4002 HEX should be 07 HEX
      4003 HEX should be 10 HEX

```

David H. H. H.

LE/VZ #13

P4.

Gus Thomason of LEWISTON, ME sent this interesting lot in.

As most VZ users are aware, there is a routine in ROM for a beep contained at 13392-13405 (3450H-345dH). As this is ROM, we cannot change the pitch/duration of the beep, but we can copy the M/L onto user RAM ie;

```
FOR I=0TO13:A=PEEK(I+13392):POKE-32768+I,A:NEXT
```

By setting the machine code pointer (POKE30862,0:POKE30863,128) and executing (X=USR(0)), we obtain the same beep. As this routine is now in RAM, we can alter the frequency ie;

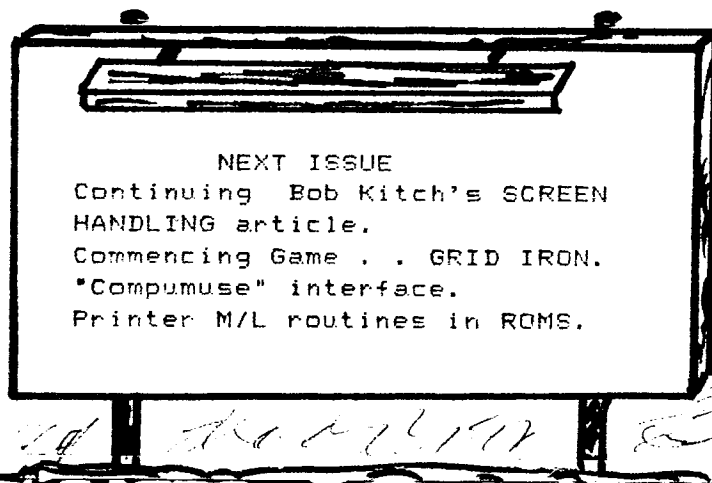
```
FOR I=1TO255:POKE-32766,I:X=USR(0):NEXT
```

We now have sound effects covering a much broader spectrum than that previously obtainable in BASIC, simply by POKEing values at address -32766 and executing. To alter duration, POKE in values at address -32763. This enables very suitable sound effects for games purposes.

Also, I managed to tap into the VZ's tiny speaker and connect it to an external 200mm woofer. Eventually I plan to feed this output through an amplifier and use my trusty VZ for music synthesis.

Here also is a program for HI-RES circle drawing;

```
10 CLS:PI=3.14
20 INPUT"X CENTRE";X
30 INPUT"Y CENTRE";Y
40 INPUT"RADIUS ";R
50 MODE(1)
60 FORA=.02TO2.02*PISTEPPI/(PI*R)
70 SET((R*SIN(A)+X),(R*COS(A)+Y))
80 NEXT
90 GOT090
```



NEXT ISSUE
Continuing Bob Kitch's SCREEN
HANDLING article.
Commencing Game . . GRID IRON.
"Compumuse" interface.
Printer M/L routines in ROMS.

Teacher :- "Give me a sentence
starting with I, Susie."
"Yes Miss. I is -"
"No, no, no, Susie. You don't say
"I is", you say "I am"."
"Alright Miss. I am the ninth
letter in the alphabet".

HEE HEE
TEE HEE

HA HA HA

SEPTEMBER 1986.

All prices are correct at time of printing, but may change without notice. All articles available while stocks last. All prices in A\$.

All tape software includes postage up to four tapes.

When ordering software, always state :- which computer VZ200 or VZ300, if you have an expansion RAM unit, and if you have a disc drive system connected or denote as below.

VZ1 = unexpanded VZ200. VZ2 = unexpanded VZ300.
VZ3 = expanded VZ200. VZ4 = expanded VZ300.

IE. TB15 = Tape only unit of B15. DB5 = Disc only unit of B5.

T/DE4 = Tape or Disc unit of E4. The price stated is for a Tape unit. If a Disc unit is required, add \$5.00. to the Tape price. The price of a Disc unit is as stated.

We now accept BANKCARD and VISACARD, as well as bank, building society, credit union, private cheques, or Aust Post money orders.

Make cheques payable to J.D'ALTON or VSOFTWAREZ.

* * * NEW SOFTWARE. * * *

DB5 LE'VZ STATEMENT V2.0. \$185.00. VZ4.

For small business use. Based on LE'VZ D'BASE. Random access records. Requires the Disc Drive System, a printer and VZ DTR. Process and print end of month statement/s, labels, pay into account etc. All money calculations carried out, IE. Debit, Paid in and Statement \$ totals. Comes with a 20 page instruction booklet. Write for more information or see a demonstration.

DB16 CHEQUE LEDGER DISC \$ 60.00. VZ3-VZ4.

A small business unit based on T/B1 (CASHBOOK LEDGER) but for Disc operation only, in that all data is saved/loaded to/from Disc.

Type in :- date, paid to, cheque #, bank \$ and 12 other \$ columns. View data, correct (edit) data, printout of all data across two A4 sheets of paper by printing the left side then the right side. This allows an 80 column printer such as a GP100 or similar rather than an expensive wide business type.

Each "type in session" is saved to Disc, which is loaded in at the next session so that new data is typed in and merged. This is then saved to Disc. In this way the month's or period's file is built up ready to be printed at the close of the month/period.

At the close of that month/period, you type in the previous month's/period's running totals. All \$ totals are then calculated and printed at the bottom.

D/T19 COPY/PROTECT. \$ 30.00. VZ1-VZ4.

Incorporates two programmes BREAKPROOF and FILECOPIER. Using BREAKPROOF on Basic programmes produces versions which autorun and will automatically restart, if the <BREAK> key is pressed. FILECOPIER allows the transfer of all Basic or Machine Code programmes to or from tape or disc.

DU20. DISC GUARD. \$ 60.00. VZ1-VZ4.

DISK GUARD prevents easy copying of programmes stored on Disc. IE. <DCOPY> and FILECOPIER cannot copy a DISK GUARDED Disc. Basic programmes are automatically BREAKPROOFED to produce an autorun programme, which will rerun if the <BREAK> key is pressed. That programme cannot be effectively listed/listed.

T/DU21 VZ-EFSON F/PATCH. \$ 10.00. VZ1-VZ4.

Larry Taylor's new M/L unit. It allows Epson or Epson compatible printers to LPRINT or LLIST all of the VZ's inverse and graphic characters. These same characters can also be dumped to the printer from the LO-RES screen in the COPY mode. In MODE(1), use of the COPY command will also dump the HI-RES screen to the printer.

COPY,n, allows a range of 4 to 8 to be selected to allow for varying line feeds for different printers. The utility adjusts for any size VZ memory. It also prints the Extended Basic commands that are used if a programme is written using the Extended Basic utility. Very handy! It can even be used with the Extended Basic utility loaded.

DU22 Disk Copy. \$ 10.00. VZ1-VZ4.

Another M/L utility which is similar to DCOPY with the added facility of VERIFY. This is done as it runs and shows the sector numbers.

EXISTING SOFTWARE.

D/TU2	EDITOR/ASSEMBLER	\$ 20.00.	VZ3-VZ4.
D/TB1	CASH BOOK LEDGER	\$ 20.00.	VZ3-VZ4.
TU4	COLOUR GRAPHICS	\$ 10.00.	VZ3-VZ4.
D/TE1	KEYBOARD	\$ 8.00.	VZ1-VZ4.
D/TE2	WORDMATCHING	\$ 10.00.	VZ3-VZ4.
D/TE3	MEATPIES	\$ 10.00.	VZ3-VZ4.
D/TU3	UTILITYS	\$ 15.00.	VZ3-VZ4.
TU5	WEAVING DRAFTS	\$ 10.00.	VZ1-VZ4.
D/TE4	MATHS COUNTDOWN	\$ 10.00.	VZ3-VZ4.
D/TE5	COORDINATES	\$ 10.00.	VZ2-VZ4.
D/TE6	TOWER of HANOI	\$ 8.00.	VZ1-VZ4.
D/TE7	MICROSCOPE	\$ 8.00.	VZ3-VZ4.
D/TE8	BLOCK PUZZLER	\$ 10.00.	VZ1-VZ4.
TE20	PLUS and MINUS	\$ 10.00.	VZ1-VZ4.
TE24	MATHS	\$ 15.00.	VZ3-VZ4.
TE25	QUEENSLAND	\$ 10.00.	VZ1-VZ4.
TE27	EUROPEAN CAPITALS	\$ 10.00.	VZ1-VZ4.
TE30	CAMPING	\$ 10.00.	VZ1-VZ4.
D/TG2	MANSION and NOVA	\$ 12.50.	VZ1-VZ4.
MANSION... VZ3-VZ4. for NOVA			
D/TG3	VZ MONOPOLY.	\$ 12.50.	VZ3-VZ4.
TU12	SEARCHTAPE	Deleted.	
D/TG13	SCOTLAND YARD	\$ 12.50.	VZ3-VZ4.
DB4	LE'VZ D'BASE	\$ 98.00.	VZ3-VZ4.
TB15	DATABASE-VZ	\$ 25.00.	VZ3-VZ4.
TG35	HAUNTED MANSION	\$ 12.50.	VZ3-VZ4.
TU6	VZ EXTENDED BASIC	\$ 15.00.	VZ1-VZ4.
TU7	PROTECT	Deleted.	
TU8	CMERGE/DELETE/REN	\$ 12.50.	VZ3-VZ4.
TU9	MONITOR DEBUGGER	\$ 25.00.	VZ1-VZ4.

This new version finds VZ memory size itself.

TU10	EXTENDED BASIC	\$ 12.50.	VZ3-VZ4.
TU11	ARRAY/RESTORE	\$ 14.95.	VZ3-VZ4.

You must have TU10 to use TU11.

D/TU12	FILESEARCH	\$ 10.00.	VZ1-VZ4.
DE1-8	EDUDISK	\$ 50.00.	VZ3-VZ4.
T/DE9	MEATPIES V2.	\$ 15.00.	VZ3-VZ4.
TU18	LOAD XX80 FILES.	\$ 20.00.	VZ3-VZ4.

This new version finds VZ memory size itself.

T/DG36	BLACKJACK.	\$ 20.00.	VZ3-VZ4.
T/DG37	POKER MACHINE.	\$ 20.00.	
T/DG38	WORDSQUARES.	\$ 10.00.	
T/DG39	COMPUTER MONOPOLY.	\$ 15.00.	
T/DG40	TRIVIAL CULT.	\$ 15.00.	
T/DG41	SCOTLAND YARD.	\$ 15.00.	



NOTE ON TU9
MONITOR/DEBUGGER.

The new version
2.0, comes with
instructions to
enable the purchaser
to save it to Disc.

NEW CLUBS/USER GROUPS.

VZ USER

Mr. Mark Harwood, P.O. Box 154,
DURAL. NSW. 2158.

I understand regular meetings are
held. Their Newsletter is rather
informative. I don't know their
fees, sorry.

VZ DOWN UNDER.

Mr. Scott Le Brun, 5 Cameron Court,
WANTIRNA. VIC. 3152.

I have no other details.

Change of address.

AD LIB VeeZed MICRO CLUB.

Gordon Browell has moved from the
Northern Territory and is now
located in QLD.
13 Brookes St., BIGGENDEN. QLD.
4621.

Over the next few editions of LE'VZ, it is intended to introduce the users to some of the hardware aspects of the video display on the VZ and some of the software implementations of the various screen modes.

1. Introduction to the MC6847 Video Display Generator.

The VZ-200/300 uses the Motorola MC6847 Video Display Generator (VDG) chip (sometimes referred to as a Cathode Ray Tube Controller - CRTC) to interface data read from the video RAM section of memory and to produce a modulated RF video signal or monitor output. The VDG is capable of operating in 14 different display modes, however only 3 of these are implemented on the VZ.

The VDG has the complex task of converting data from the screen memory (2K video RAM) into the form necessary for the raster scan display used in televisions and monitors. On these devices, the image is 'drawn' on the screen one horizontal scan line at a time. The 'spot' moves across the screen from right to left and its brightness or color (chroma) is varied to produce the required display. In practice, the whole screen is built up in two passes, the first on even-numbered lines and the second on odd-numbered lines, by a process called 'interlacing' which helps to avoid flicker. The process occurs every 20 ms. or 50 half-frames are drawn every second.

A timing or clock pulse is required to tie the scan rate and memory access cycles of the VDG in with that of the 280A CPU - otherwise chaos would reign on the buss systems! An external (to the VDG chip) 3.58MHz. clock is used to synchronize both devices. This frequency is required by the VDG to set the correct scan rate. Hence the speed of the CPU is limited by the VDG in the VZ.

The format of the display area under the control of the VDG is actually 256 'dots' across by 192 'dots' down giving a total of 49152 fundamental picture elements (pixels) under the 'control' of the VDG. Each pixel may be one of up to 8 colours depending upon the mode selected.

The screen is 'memory mapped' with each pixel on the screen being represented by a byte (or a number of bits thereof) in the 2K of video RAM. There is a one to one correspondence between the X-Y location of the pixel on the screen and the address of its control information in memory. The sequence of memory addresses which are accessed to extract data to be converted to a video signal is controlled by the VDG. The VDG also keeps track of the position of the moving spot and produces the necessary timing signals to synchronize the display to the computer. It produces for instance the horizontal sync pulse for indicating when the end of the video line has been reached so that the spot can 'flyback' to the beginning of the next scan line.

As users will have observed, the MC6847 does not utilize the entire video screen. The standard video screen consists of 262 scan lines extending across the screen, but the usable display window is offset from the top by 25 lines and extends 192 lines down the screen with a further 25 lines at the bottom being offset. Across the screen, the timing pulses are blanked-off to reduce the useable horizontal width. The linearity of images is better in the central portion of a screen and is used by the VDG.

The MC6847 is capable of generating 14 display modes as set out in Table 1.

TO CONTINUE LE'VZ # 14

MY VISIT TO MELBOURNE.

I was in Melbourne on the 28th., 29th. and the 30th. of July. On Monday my first visit was to the Richmond D.S.E. store, where I met the manager Mr. George Hood. Their computer expert was away so an OOP, Mr. Ron Bleckendorf filled in for him. I demonstrated our LE/VZ D'Base, Larry Taylors EDUDICK and his utilities, which included COPYPROTECT, FILESEARCH, DISKCOPY etc. Scott Le Brun showed us the Compumuse unit complete with various sounds.

Nancy Huggins showed us his disc based data base unit which he uses to file his record (music) collection. Geoff Gerloff and Peter Ellis also were present. I especially thank Peter for driving me over to the Springvale D.S.E. store. There I met the manager, Mr. Steve Toth and computer expert Mr. Rowan Miller-Randle. I demonstrated the various software as before. On Tuesday I visited the Box Hill D.S.E. store in the modern railway station shopping centre. The manager, Mr. Grant Guy was very interested as I demonstrated the software. In the afternoon I visited the Melbourne city D.S.E. store, where I met Mr. Reiser (I think).

I thank all those I met at the D.S.E. stores for their friendliness and attentiveness during my demonstrations. I showed various staff an incomplete pilot print of my VsoftwareZ, WhintZ, VHardwareZ book, and gave them various advertising and information sheets, including David Newcombes four page hardware information.

I advise anyone who wants to see any of this information to go to the Dick Smith Electronic stores that I visited and talk to the staff mentioned. Finally, I thank the D.S.E. staff of various stores who have put my advertising sheets up on display in their store. This of course applies to the stores I did not visit.

JOHN.

COMPUMUSE MUSIC SYNTHESIZER.

Ever wanted your VZ to Play music? You can with this little beauty! Not only does it allow you to play music over a five (5) octave range, it can also be used to generate an almost unlimited array of incredible sound effects!

Your computer programs may never be the same again. Just connect your PRINTER INTERFACE into the unit and away you go. No need to buy anything else. The kit comes complete with case, Centronics printer socket, power and external speaker sockets, instructions and program listings.

AS 65.00 - complete kit.

AS100.00 - built and tested unit.

Mr. Scott Le Brun, 5 Cameron Court,
WANTIRNA. VIC. 3152.

Both include Post & Packing.

Components used are Prime Spec., no cheap brands as supplied with other kits.

LIGHT PEN SYSTEM.

A\$70.00

Some folk have asked me to explain more about the LIGHT PEN UNIT. The "pen" has a switch and a light sensor so that when it is held against the VDU, it sends the necessary signal to the VZ. The other end of the "pen" connects to a special interface which plugs into the VZ's Printer/Joystick socket. The System tape that comes with it is loaded and run to set up the VZ ready for you to programme for it. The tape also has a few demonstration programmes on it.

An answer quiz requires you to press the "pen" against the VDU on the answer that you choose. One prints on the VDU characters as selected. Others draw patterns.

. Very interesting.

AE'VZ # 13

P9.

LETTER'S TO THE EDITOR.

I am trying to collect together a variety of information on the VZ for the ultimate use of all Users. Most of you will have seen my bibliography of magazine articles for the VZ. (If not, then send me a SSAE). Some of the items I am having trouble locating are Newsletters from old Users Groups.

If anyone has copies of old newsletters, I would like to swap or buy copies - perhaps exchange for some of my reprints.

I am particularly seeking the eight newsletters produced by Luigi Chiodo's Victorian Group - also any newsletters from S.A. and W.A.

Write and let me know what you have (and what you want!).

Bob Kitch, 7 Eurella St., KENMORE Qld. 4069.

This little program was contributed by Jason Oakley of Taree, NSW.

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10 REM CONTRIBUTION FROM JASON OAKLEY
12 REM PRESS VARIOUS KEYS AND WATCH THE RESULT
20 CLS
30 POKE28940,33
40 POKE28940,28
50 POKE28940,45
60 POKE28940,47
70 GOTO30
```

WANTED.

A good Z80 M/L book, such as ZACKS or similar.

Mr. Andrew Seeger, C/O Monbulk F.O., MONBULK. VIC. 3793.

FOOTY FEVER TIME!
C'MON THE HAWKS IN MELBOURNE.
SOUTHPORT STRIKES AGAIN THIS YEAR.....
IN BRISBANE.

"What did your Mother do yesterday morning, Tommy?"

"She done her shopping, Sir".

"Done her shopping, Tommy? Where's your gramma?"

"She done her shopping as well, Sir?"

Dick Smith Electronics.

The new Technical Manual is now for sale from most stores \$14.95. It is an improvement on the first one, in that it contains more information on the VZ, and of course includes the Disc Drive.

If you would like more hardware to become available from D.S.E. then please keep hounding them.